Teaching Reading and Summarizing via Argument-focused Text Annotation

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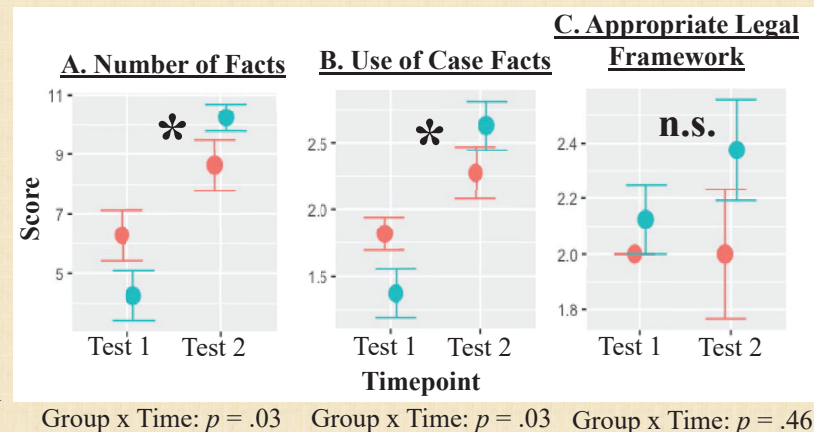
BACKGROUND

- One reading skill students often struggle with is summarizing.
  - **Summarization** is the ability to convey the most crucial information from a text in a concise and clear form (i.e., the gist of the material[1]).
- The skill of summarization is critical in formal education because comprehension of complex texts is essential to many academic disciplines like science, humanities, and law[2].
- **Annotation** (i.e., highlighting key terms and ideas) has been identified as one of multiple cognitive literacy strategies that can help students when they are looking at structure, examining ideas, extracting meaning, and communicating understandings[3].
  - Annotation-based learning has proven to be beneficial: first-year college students in a randomized controlled trial did better on future comprehension exams when annotating narrative texts compared to those using a question-answer strategy[4].
- Thus, it seems feasible that annotation could be a useful activity for law students, such as when understanding legal opinions.

RESULTS

Group
Gloss First
Gloss Second

Outcome variables were part of an authentic class assignment and were evaluated by the course instructor based on their rubric.

A. Number of Facts — Group x Time: $p = .03$
B. Use of Case Facts — Group x Time: $p = .03$
C. Appropriate Legal Framework — Group x Time: $p = .46$

HYPOTHESIS & PROJECT GOAL

Hypothesis: Reading *and annotating* legal opinions, rather than only reading them, will improve students' understanding of factor-based legal frameworks.

Project Goal: Assess if annotation improves students' learning and, if so, to what extent.

PROCEDURE

- First-year law students in a legal writing class were randomly assigned to one of two conditions in a waitlisted control design.
- These students were evaluating and annotating court-stop cases.
- ½ of the students ($n = 11$) used Gloss early in the term, and ½ used Gloss later in the term ($n = 8$).
- The group not using Gloss studied the cases as usual.
- Thus, all the students used Gloss at some point during the term.

MATERIALS & METHODS ($N = 19$)

CONCLUSIONS & FUTURE DIRECTIONS

Number of Facts (Plot A):
- Overall, students do better on Test 2 compared to Test 1.
  - Students are indeed learning.
- We found a significant cross-over interaction where whichever group used Gloss most recently does better.
  - Gloss helps with learning, at least in the short-term.

Use of Case Facts (Plot B): similar trends as for Number of Facts (Plot A)

Appropriate Legal Framework (Plot C):
- We do NOT observe a benefit of Gloss.
  - This makes sense given that Gloss is focused on helping students identify specific facts within the case.
  - This reassures us that the learning benefits are indeed due to Gloss usage (as opposed to one group being smarter or more motivated than the other).

Future Directions[5,6]:
- Assess whether including suggested GPT-4 annotations impacts students' learning and speed in the annotation task. We will prompt GPT-4 to provide suggested annotations, and students will assess if the labels are accurate.
- Explore whether student-annotated cases can be used as training data in natural language processing and machine learning tasks.

REFERENCES: [1] Graesser, Millis, & Zwaan. (1997). [2] Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects (2010). [3] Zywica, J., & Gomez, K. (2008). [4] Ngovo, B. (1999). [5] Gray, M., Savelka, J., Oliver, W., & Ashley, K. (2022). [6] Gray, M., Savelka, J., Oliver, W., & Ashley, K. (2023).